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COMMERCE AND INDUSTRY

INDUSTRIAL TRENDS

REPORT CONTAINING BACKGROUND INFORMATION FOR THE COMMERCE AND INDUSTRY ELEMENT OF THE COMPREHENSIVE PLAN OF SAN FRANCISCO • PREPARED BY THE SAN FRANCISCO DEPARTMENT OF CITY PLANNING

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Report containing Background Information for the Commerce and Industry Element of the Comprehensive Plan of San Francisco.

Prepared by the San Francisco Department of City Planning in conjunction with the Office of the Mayor, Economic Analysis Unit.

[SF. office of the mayor.
Economic analysis unit]

Industrial surveys SF
Employment "

May, 1975

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INTRODUCTION

In recent years, decentralization of employment in the region has greatly affected San Francisco's industrial base. Formerly the industrial center of the Bay Area -- employing nearly one out of every two residents of the region engaged in industrial production and related activities -- San Francisco now ranks third among Bay Area counties in industrial employment.* As a consequence of the steady decline of San Francisco's industry, the city's share of the region's industrial employment has been cut almost in half in just two decades.

At the same time, a growing national and regional finance-insurance-real estate industry has emerged as the city's most active source of employment and its strongest economic base. This shift of emphasis within the local economy marks the change-over from a balanced blue-and-white-collar employment market to a market emphasizing finance and administration, services, and retail trade.

Over the last two decades, the number of industrial jobs located in the city has steadily declined while industrial employment in the neighboring Bay Area counties has nearly doubled. Not surprisingly, San Francisco's blue-collar-employed residents have decreased in number by one-third, the city's resident population has dropped by nearly one-tenth, and the number of city residents traveling to neighboring counties for their source of employment has increased by over one-third.

This report is a survey of recent conditions and trends in San Francisco's industrial sector. It provides general statistics on industrial location and activity in the city and the Bay Area, and offers projections of future activity. The material presented is part of the background information for preparation of the Commerce and Industry Element of the City's Comprehensive Plan.

*The term "Bay Area" is taken here to mean the nine-county metropolitan area at large, covering Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties.

SUMMARY

SAN FRANCISCO'S ECONOMIC BASE

1. Changing industrial patterns in San Francisco, the Bay Area, and even the Nation have had a significant influence on the number and kinds of industrial workers employed in the city. Given the rise of new employment centers elsewhere in the Bay Area and a continued decentralization of population, San Francisco's economic base has become far less diversified than just a few decades ago. Total industrial employment in the city declined by 11.8 percent (from 158,817 to 140,002) during the period from 1953 to 1972. In contrast, the surrounding eight counties of the Bay Area -- where there is substantially more vacant, inexpensive land for factory development -- increased their industrial employment by 82.8 percent.
2. The number of industrial establishments in San Francisco declined 19.1 percent (from 7,104 to 5,745) during the period 1953 to 1972. Conversely, the nine-county Bay Area excluding San Francisco increased its number of industrial establishments by 47.3 percent, from 10,492 to 15,454.
3. Numerical projections indicate that industry is likely to continue diminishing as a source of employment in San Francisco in both absolute and relative terms. Total industrial employment in the city is expected to decline by between 1.3 and 20.4 percent during the period 1970 to 2000. While the city had an estimated 138,853 jobs in industry in 1970, it can expect to employ between 110,500 and 137,000 persons in the year 2000.

MANUFACTURING

1. Manufacturing, San Francisco's largest industrial sector, employed 53,224 persons in 1972. The city's manufacturing base is primarily concentrated in four major categories: (a) food and kindred products (8,354 employed in 1972), (b) apparel (8,082), (c) printing and publishing (9,997), and (d) fabricated metal products (4,277). Additionally, there were 9,927 persons employed locally in manufacturing administrative and auxiliary units in 1972.

2. Manufacturing employment in San Francisco declined by 23.4 percent between 1953 and 1972. The surrounding eight counties of the Bay Area increased in manufacturing employment by 94.6 percent for the same period. Consequently, the city's share of the Bay Area's manufacturing employment declined from 33.1 percent in 1953 to 16.3 percent in 1972.
3. Major declines were experienced locally in the following manufacturing sectors during the 1953 to 1972 period: lumber and wood products (down 65 percent), furniture (down 61.6 percent), chemicals (down 56.1 percent), non-electrical machinery (down 55.3 percent), and leather and leather products (down 51.8 percent).
4. Not all local manufacturing sectors declined during the 1953 to 1972 period. Moderate to low increases were experienced in a number of sectors: rubber and plastic products (up 210.2 percent), electrical equipment (up 23.3 percent), administrative and auxiliary units (up 13.8 percent), and apparel (up 1.4 percent).
5. The number of local manufacturing establishments declined from 2,141 in 1953 to 1,549 in 1972, a drop of 27.7 percent. In contrast, the eight surrounding counties of the Bay Area increased their number of manufacturing establishments by 74.5 percent, from 2,784 in 1953 to 4,857 in 1972.
6. Value added by manufacture in San Francisco increased in constant dollars by 27.1 percent between 1958 and 1967. The Bay Area as a whole increased its value added by 89.1 percent for the same period. Value added per employee also increased in San Francisco, and the city's rate of increase was above that of the Bay Area. San Francisco's value added per employee increased in constant dollars by 59.3 percent, while the Bay Area as an aggregate increased its value added per employee by 45.3 percent.
7. Investment in capital facilities related to manufacturing also increased in San Francisco during the 1958 to 1967 period (up 37.3 percent). However, this fell below the 87.6 percent increase experienced in the Bay Area. Santa Clara County emerged as the most active area for capital investment in manufacturing. In 1967, new capital expenditures in manufacturing in Santa Clara County were more than 5 times greater in dollar value than similar investment in San Francisco.

8. Numerical projections indicate that total manufacturing employment in San Francisco is expected to decline by between 11.7 and 25.6 percent between 1970 and 2000. The city had 53,782 jobs in manufacturing in 1970. Employment projections would mean that between 40,000 and 47,500 jobs would exist in manufacturing locally in the year 2000.

WHOLESALE TRADE

1. Wholesale trade is San Francisco's second largest industrial sector, and employed 41,618 persons in 1972. Local wholesale trade employment is concentrated in four general categories: miscellaneous wholesalers (13,597 employed in 1972), machinery equipment and sales (7,686), groceries and related products (5,840), and electrical goods (3,454). Additionally, there were 4,902 employed locally in 1972 in wholesaling administrative and auxiliary units.
2. Wholesale trade employment declined by 15.5 percent in San Francisco between 1953 and 1972. In contrast, wholesaling employment in the eight surrounding counties of the Bay Area increased by 167.6 percent during the period. Consequently, San Francisco's share of the Bay Area's employment in wholesaling declined from 67.5 percent in 1953 to 39.6 percent in 1972.
3. The number of establishments involved locally in wholesale trade declined by 22.9 percent between 1953 and 1972. Wholesale trade establishments for the eight surrounding Bay Area counties increased by 109.6 percent for the period. In 1972, there were an estimated 2,336 wholesale trade outlets operating in San Francisco, down from 3,028 establishments in 1953.
4. Numerical projections indicate that wholesale trade is likely to exhibit a continued downward trend in the foreseeable future. Thus, employment projections show an expected decline of between 21.8 and 29.4 percent for the period 1970 to 2000. San Francisco had an estimated 39,639 jobs in wholesale trade in 1970; employment projections would mean an estimated 28,000 to 31,000 employed in the year 2000.

TRUCKING AND WAREHOUSING

1. Trucking and warehousing is one of the few industrial sectors to experience employment growth locally. During the period 1953 to 1972, employment in this category grew by 1.3 percent, from 6,034 jobs in 1953 to 6,111 jobs in 1972. The surrounding eight counties of the Bay Area, however, experienced substantially more growth in this sector (up 68.1 percent). Thus, San Francisco's share of trucking and warehousing employment in the Bay Area fell from 42.1 percent in 1953 to 25.3 percent in 1972.
2. The number of San Francisco firms engaged in trucking and warehousing operations declined during the 1953 to 1972 period. San Francisco had 238 establishments in this category in 1972, down 17.4 percent from the 288 establishments held in 1953. Establishments within the eight surrounding counties grew by 51.6 percent, up 342 firms from the 663 firms operating in 1953.
3. Employment projections indicate a highly fluctuating pattern for trucking and warehousing employment in San Francisco. This represents both a potential problem as well as potential employment and income opportunities. Employment in trucking and warehousing is forecast for the year 2000 at between 6,500 and 9,000 jobs locally, a growth of between minus 10.8 percent and plus 23.5 percent for the period 1970 to 2000. Thus, depending on a number of factors such as, the cost and availability of land, access to markets and distribution routes, and public policy, San Francisco employment in trucking and warehousing could experience either a moderate decline or moderate growth by the year 2000.

RAIL AND WATER TRANSPORTATION

1. San Francisco suffers from a rail service disadvantage in relation to the neighboring counties of the Bay Area. While the price structure for rail service is virtually the same for all Bay Area counties, San Francisco does not have the frequency of service or direct long-haul rail line access enjoyed by other counties.
2. San Francisco continues to hold a major position as a general cargo port on the West Coast. However, the volume of port activity and revenues has been declining recently, and the Port handles a relatively small proportion of the total waterborne commerce passing through the Golden Gate.

3. Between 1953 and 1972, water transportation employment in San Francisco declined by 27.5 percent to 6,852 jobs. The city's share of the Bay Area's employment in this category has also dropped: from 92.9 percent in 1953 to 86.5 percent in 1972.
4. According to data compiled by the U. S. Army Corps of Engineers, total waterborne commerce tonnage in San Francisco declined by 24.0 percent between 1950 and 1970. The entire Bay Area Harbor System, conversely, experienced a growth of 43.0 percent in total tonnage for the period. The city's share of total Harbor System tonnage for the period dropped from 13.2 percent in 1950 to 7.0 percent in 1970.
5. In constant dollars, the value of imports and exports at the Port of San Francisco grew by 157.9 percent between 1950 and 1970. The value of shipments for the entire Harbor System increased by 239.8 percent for the period. San Francisco continues to hold Harbor System leadership in the value of its shipments.
6. The impact of Port operations as an economic base touches a number of interrelated sectors. Trading volume at the Port produces demands for service inputs from a wide variety of other economic sectors, such as shipbuilding and repair, specialized manufacturing, and trucking and warehousing. In 1970, it was estimated that San Francisco's maritime commerce directly accounted for at least 20,000 jobs and payrolls of \$244 million. Of the total, approximately 10,000 jobs with a payroll of \$122 million went to local residents.
7. Employment forecasts for water transportation show a highly unstable trend. The Port has recently experienced marked declines in employment, trading volume and revenues. In terms of employment projections, no clear trend for the future can be foreseen. According to these projections, San Francisco employment growth in water transportation for the period 1970 to 2000 will range from minus 18.8 percent to plus 17.3 percent. San Francisco had 11,081 jobs in this category in 1970; under the forecasts, between 9,000 and 13,000 jobs would exist in the year 2000.

TRANSPORTATION BY AIR

1. This sector has been the most active employment category among transportation industries locally, increasing from 577 employed in 1953 to 5,165 employed in 1972. This represents a percentage increase of 795.1 for the period. Growth in transportation by air within San Francisco has exceeded that experienced for the other eight counties of the Bay Area. Thus, San Francisco's share of Bay Area employment in this category increased during the 1953 to 1972 period from 5.6 to 19.1 percent.
2. The number of establishments engaged in air transportation has grown substantially, providing increases in employment for the sector. In 1953, for instance, 9 firms existed in San Francisco, while in 1972, 36 firms operated in the city. This represents an increase of 300.0 percent for the period. Outside San Francisco, the eight surrounding counties of the Bay Area also experienced growth in the number of air transportation establishments: from 30 in 1953 to 82 in 1972, an increase of 173.3 percent.

LOCAL AND INTERURBAN PASSENGER TRANSIT

The local and interurban passenger transit sector includes a wide variety of activities involved in passenger transportation: local and suburban transit, taxicabs, highway passenger transit, charter services and limousine rentals, school buses and terminal facilities.

1. Long-term trends in this employment category are difficult to discern, as data were not available for San Francisco in 1953. In 1972, however, an estimated 5,417 jobs existed in the city in this category, or 52.7 percent of the Bay Area's employment for the industry.
2. Bay Area counties as an aggregate experienced major employment growth in passenger transit between 1953 and 1972. An estimated 2,237 jobs existed regionally in 1953, while in 1972 there were 10,276 jobs in the industry. This represents a growth of 404.5 percent for the period.
3. Locally, the change in the number of establishments engaged in passenger transit has been substantial. Since 1953, 644 new firms have been established in San Francisco.

4. Employment projections for passenger transit indicate that the industry will continue to grow in relation to population growth throughout the region. In 1970, approximately 4,296 jobs existed in passenger transit locally. By the year 2000, between 4,500 and 5,500 jobs, an increase of between 4.7 and 28.0 percent, will exist if demand factors related to population remain constant.

CONTRACT CONSTRUCTION

1. Contract construction is San Francisco's third largest and perhaps most unstable employment sector, employing 21,615 persons in 1972. Local construction jobs have fluctuated year by year and were down 10 percent between 1953 and 1972. Bay Area employment in the industry (excluding San Francisco) grew by some 19,767 jobs or 43.9 percent between 1953 and 1972. Consequently, San Francisco's share of the area's construction employment has dropped from 34.8 percent in 1953 to 25.0 percent in 1972.
2. The number of local establishments in the industry has also declined since 1953 (down 43.3 percent). This is so even though the number of firms in the surrounding counties of the Bay Area grew by 3.9 percent for the period.
3. Employment projections for contract construction in the year 2000 have quite a broad range. This is primarily because there have been no clearly measurable trends in the last two decades. Thus, between 17,500 and 24,500 jobs could exist in San Francisco by the year 2000, a growth of between minus 12.1 and plus 23.0 percent.

BACKGROUND

Although in former times San Francisco was the leading manufacturing city in the West, it has never been one of the nation's great manufacturing cities of the rank of Pittsburgh, Detroit or St. Louis. Instead, San Francisco has always had a multifarious, balanced economy, with a number of important activities: finance and administration, trade and distribution, contract construction, business and personal services, as well as manufacturing. Recent history has seen a shift in the balance, with industrial employment and the activities it supports steadily declining from all-time high reached during World War II.

In contrast with the city's continuing loss of industrial employment, the surrounding counties of the Bay Area continue to attract new industry.* It is only natural that the areas outside San Francisco have overtaken the city in industrial growth. San Francisco's one natural advantage -- its peninsular location which enabled extensive port development -- has been challenged by new port facilities in other parts of the Bay and weakened by its lack of the good, direct rail access enjoyed by the East and South Bay. Expansion of industry within San Francisco has been hampered, furthermore, by the unavailability of large industrial sites at prices competitive with suburban industrial land. As a consequence, San Francisco lost 18,815 jobs in industry between 1953 and 1972, while the remaining counties of the nine-county Bay Area gained 171,763 industrial jobs. Accordingly, San Francisco's share of the region's total industrial employment fell from 40.8 percent in 1953 to 24.9 percent in 1972.

In 1972, San Francisco industry employed 140,002 persons. According to the 1970 Land Use Survey of the Department of City Planning, industrial land uses occupied 1360.55 acres, or 5.88 percent of the city's net land area. This represents a decrease of roughly 103 acres of industrially used land for the period 1964 to 1970.

*The term "industry", variously defined, is taken here to include contract construction (Standard Industrial Classification code number 15 through 17), manufacturing (SIC 19 through 39), local and interurban passenger transit (SIC 41), trucking and warehousing (SIC 42), water transportation (SIC 44), transportation by air (SIC 45), and wholesale trade (SIC 50).

Table I

Industrial Employment in San Francisco
and the Bay Area, 1953 and 1972*

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
	Bay Area (Total)	389,003	100	560,766	100	+171,763	+44.15
	Bay Area Excluding SF (Total)	230,186	59.33	420,764	75.03	+190,578	+82.79
	San Francisco (Total)	158,817	40.82	140,002	24.96	-18,815	-11.84
19-39	Manu- facturing	69,479	----	53,224	----	-16,255	-23.39
15-17	Contract construction	24,024	----	21,615	----	-2,409	-10.02
41	Local and interurban passenger transit	N/A	----	5,417	----	----	----
42	Trucking & warehousing	6,034	----	6,111	----	+77	+1.27
44	Water trans- portation	9,454	----	6,852	----	-2,602	-27.52
45	Transporta- tion by air	577	----	5,165	----	+4,588	+759.14
50	Wholesale trade	49,249	----	41,618	----	-7,631	- 15.49

Source: U.S. Department of Commerce, County Business Patterns, 1953 & 1972

*Due to changes in the Standard Industrial Classification (SIC) system, data presented in this and following tables may not be strictly comparable. "N/A" indicates years in which data were not available for various SIC categories. The percentage change over time for total San Francisco industry is conservative since employment estimates for local and interurban passenger transit were not available for 1953.

Still, the amount of land now used for industry makes up only about 44 percent of the 3358 acres of property now zoned for industrial use.*

*In the Land Use Survey, industrial land use does not include land used for transportation and public utilities. If transportation and public utilities are included, land used for industrial purposes has declined by 481 acres, from 2418.08 acres in 1964 to 1936.95 in 1970. This is a decline of 20 percent.

THE MAJOR INDUSTRIAL DISTRICTS

Practically all the industrial development in San Francisco has taken place on the flat areas in the eastern one-quarter of the city. Map I shows the land devoted to industry in 1970. Six major industrial areas have been delimited for purposes of this report, 1224 acres of land used for industry, 90 percent of the city total. Particular industries have shown a preference for locating in certain areas of the city, based upon their special needs. Among the strongest factors in determining location are: market orientation; proximity to suppliers, customers, and raw materials; land and floor space requirements; and access to major transportation routes.

NORTHEAST DISTRICT: DOWNTOWN SUPPORT AND SPECIALIZED MANUFACTURING

With 54.9 acres of land used for industry, 4 percent of the city's total, the Northeast District contains primarily the following industries: apparel manufacturing, food processing, printing and publishing, and wholesale trade. The area has easy access to the downtown and to the waterfront where goods arrive for distribution. In addition, a few trucking and warehousing firms operate in the area.

DOWNTOWN DISTRICT: ADMINISTRATIVE OFFICES

The downtown District provides space for certain industries requiring central administrative offices such as wholesale trade, contract construction, manufacturing, and printing and publishing. In 1970 only 20.1 acres of land in this district were used for industry, 1.5 percent of the city's total industrial land. Downtown's principal importance in terms of the overall economic life of the city is in its status as the commercial center of the region. Although the industrial production occurring downtown is not of great significance, the downtown area consumes a considerable amount of the products and services of industry. Wholesaling, warehousing and delivery firms are examples of the dependent enterprises.

SOUTH OF MARKET DISTRICT: DOWNTOWN SUPPORT, SPECIALIZED MANUFACTURERS, AND CONTRACT CONSTRUCTION

The South of Market District is one of the largest and most important industrial areas, with a total of 332.9 acres used for industry, 24.5 percent of the city's total. This district contains a wide variety of industrial functions, including wholesale trade, apparel manufacturing, printing and publishing, and contract construction. There is good access to downtown commercial areas, and much of the space is inexpensive. This latter advantage makes the area attractive to small, innovative firms newly established, the so-called "incubator industries".

MISSION DISTRICT: DOWNTOWN SUPPORT AND SPECIALIZED MANUFACTURERS

In 1970, 168.3 acres of industrial land, 12.4 percent of city total, existed in the Mission District. This district provides space primarily for the wholesale trade and food processing industries, but as with the South of Market District it contains a wide variety of industrial uses. The district is well served by public transit and has good access to downtown.

CENTRAL BASIN-ISLAIS CREEK DISTRICT: MARITIME AND MANUFACTURING

This district is predominantly devoted to manufacturing and wholesale trade. Most of the space available has a lower intensity (a lower ratio of floor space to land area) than in other industrial districts of the city, with the exception of the Bayview District. Land is available for the "horizontal" industrial development typical of most manufacturing operations. The area is a good location for maritime industries and industrial establishments dependent upon waterborne commerce to reach their markets. The Central Basin-Islands Creek District is San Francisco's largest industrial area, with 495.3 acres of land used for industry, 36.4 percent of the city total.

BAYVIEW DISTRICT: MARITIME AND MANUFACTURING

As with the Central Basin-Islands Creek District, the Bayview District provides lowrise, land-intensive space. Thus, a large portion of the city's manufacturing, maritime-related, and open yard industries are located here. Additionally, the district provides space (large and non-specialized in nature) for such storage uses as wholesaling, building supplies and metal products.



LAND USED FOR INDUSTRY

SOURCE: 1970 LAND USE SURVEY

PREPARED BY THE SAN FRANCISCO DEPARTMENT OF CITY PLANNING

MAP I

- A NORTHEAST DISTRICT
- B DOWNTOWN DISTRICT
- C SOUTH OF MARKET DISTRICT
- D MISSION DISTRICT
- E CENTRAL BASIN / ISLAIS CREEK DISTRICT
- F BAYVIEW DISTRICT

Table II

Industrial Land Use in the Six Major Industrial Districts, 1970

Area	Acres of Land Used for Industry	Percent of Total City Land Used for Industry
Northeast	54.93	4.03
Downtown	20.10	1.47
South of Market	332.85	24.46
Mission	168.26	12.36
Central Basin- Islais Creek	495.34	36.40
Bayview	152.73	11.22
(Subtotal)	1,224.21	89.97
City Total	1,360.55	100.00

Source: San Francisco Department of City Planning, 1970 Land Use Survey.



VACANT LAND

(EXCLUDING TIDELANDS AND BEACHES)

SOURCE: 1970 LAND USE SURVEY

PREPARED BY THE SAN FRANCISCO DEPARTMENT OF CITY PLANNING

MAP II

- A NORTHEAST DISTRICT
- B DOWNTOWN DISTRICT
- C SOUTH OF MARKET DISTRICT
- D MISSION DISTRICT
- E CENTRAL BASIN / ISLAIS CREEK DISTRICT
- F BAYVIEW DISTRICT

SAN FRANCISCO INDUSTRY: CONDITIONS, ISSUES AND TRENDS

MANUFACTURING

In 1972 there were 1549 firms engaged in manufacturing in San Francisco, down 592 from the year 1953. These firms employed 53,224 persons, or 16,255 fewer than the number employed in this category in 1953. Nevertheless, manufacturing has been, and remains, San Francisco's leading industrial employer, engaging 41.1 percent of the city's total industrial employment. The employment category for manufacturing includes an estimated 9,927 persons, 18.7 percent of the total, who worked in separate administrative offices and non-manufacturing auxiliary units of firms whose principal business is manufacturing; this large proportion of white-collar workers indicates the importance of San Francisco as a headquarters city for manufacturing firms.

As Table III indicates, not every segment of manufacturing employment has declined in San Francisco. Gains were shown in the administrative offices and auxiliary units of manufacturing concerns (up 13.8 percent), apparel manufacturing (up 1.4 percent), electrical equipment and supplies (up 23.3 percent), and rubber and plastic products (up 210.2 percent). The rapid growth of the electronics industry in the Bay Area, with its greatest impact in San Mateo and Santa Clara counties, virtually bypassed San Francisco: only 194 jobs were added in the city in this field between 1953 and 1972.

Table III further shows that the various declining segments of manufacturing in San Francisco have not changed at the same rate. Consequently, manufacturing employment (excluding administrative and auxiliary units) is becoming increasingly concentrated in four major categories:

Food and Kindred Products

Apparel and Other Textile Products

Printing and Publishing

Fabricated Metal Products

Together, these four accounted for 70.9 percent of 1972 manufacturing employment, excluding employment reported in administrative and auxiliary units.

Table III

Manufacturing Employment in San Francisco and
the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
...	Bay Area (Total)	210,166	100	326,999	100	+116,833	+ 55.59
...	Bay Area Excluding SF (Total)	140,687	66.94	273,775	83.72	+133,088	+ 94.59
...	San Francisco (Total)	69,479	33.05	53,224	16.27	-16,255	- 23.39
20	Food & Kindred Products	12,573	-----	8,354	-----	-4,219	- 33.55
22	Textiles	430	-----	420	-----	-10	- 2.32
23	Apparel	7,974	-----	8,082	-----	+108	+ 1.35
24	Lumber & Wood Products	1,108	-----	388	-----	- 720	- 64.98
25	Furniture	3,042	-----	1,168	-----	-1,874	- 61.60
26	Paper & Allied Products	1,373	-----	634	-----	- 739	- 53.82
27	Printing & Publishing	10,429	-----	9,997	-----	- 432	- 4.14
28	Chemicals	2,597	-----	1,141	-----	-1,456	- 56.06
30	Rubber & Plastic Products	108	-----	335	-----	+ 227	+210.18
31	Leather & Leather Products	706	-----	340	-----	- 366	- 51.84
32	Stone, Clay & Glass Products	466	-----	(D)*	-----	-----	-----

Table III Continued

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
33	Primary Metal Industries	986	----	606	----	-380	- 38.53
34	Fabricated Metal Products	7,099	----	4,277	----	-2,822	- 39.75
35	Machinery, Excluding Electrical	4,561	----	2,039	----	-2,522	- 55.29
36	Electrical Equipment & Supplies	1,714	----	2,113	----	+399	+ 23.27
37	Transportation Equipment	3,373	----	1,718	----	-1,655	- 49.06
38	Instruments & Related Products	553	----	348	----	-205	- 37.07
39	Misc. Manufacturing Industries	1,477	----	941	----	-536	- 36.28
--	Administrative & Auxiliaries	8,721	----	9,927	----	+1,206	+ 13.82

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

*(D) Denotes figures omitted to avoid disclosure of operations of individual reporting units.

Apparel making and printing and publishing are widespread in the city, but tend to concentrate in the blocks south of Market Street. There they find adequate and reasonably priced space in the older industrial buildings, convenient to both the downtown market place and the labor force. Food processors and makers of metal products need greater amounts of floor space of a specialized nature, and generally locate farther out from the downtown area. The waterfront continues to be a prime location of processors of imported foods.

While manufacturing continues to lead San Francisco's industries in employment, it should be stressed that the city's share of the region's manufacturing employment has dropped considerably, from 33 percent in 1953 to 16.3 percent in 1972. Total manufacturing employment in San Francisco has declined by 16,255 jobs, a loss of 23.4 percent, while the eight surrounding counties of the Bay Area have had a gain of 94.6 percent. Santa Clara County, with the booming growth of its electronics industry, leads the region in manufacturing employment with 125,659 jobs in 1972, or 38.1 percent of the region's total.

Value Added By Manufacture

Besides employment, another measure of manufacturing activity is the value added by manufacture. This indicator provides an estimate of local and regional industrial output trends for all manufacturing establishments surveyed by the Census of Manufacturers. Briefly defined, value added is the dollar value of manufacturing production as part of the total sales value of the products. The U. S. Bureau of the Census derives value added estimate by deducting all miscellaneous expenditures involved in the production of manufactured goods (such as the costs of materials, supplies and fuel) from the combined value of manufactured products and receipts for services rendered.

In constant (inflation-corrected) dollars, San Francisco's value added by manufacture has continued to grow, despite marked decreases in manufacturing employment. During the period 1958 to 1967, value added in San Francisco increased by \$156 million, or 27.1 percent. Still, the city lagged behind the Bay Area as a whole in production growth; the combined nine-county Bay Area experienced an increase of \$2.5 billion or 89.1 percent from 1958 to 1967. Thus, San Francisco accounted for only 6.3 percent of the region's growth for the period. Santa Clara County, with a growth of 202 percent emerged as the dominant manufacturing producer, accounting for 51.6 percent of the region's output in 1967.

Table IV

Value Added By Manufacture In San Francisco and the Bay Area: 1958, 1963 and 1967*

County	1958	% Region	1963	% Region	1967	% Region	Dollar Change 1958-1967	% Change 1958-1967
Alameda	809.7	29.2	1,020.6	26.5	1,291.3	24.6	+481.6	+59.5
Contra Costa	404.3	14.6	543.8	14.1	602.1	11.5	+197.8	+48.9
Marin	18.2	.7	24.2	.6	57.1	1.1	+38.9	+213.7
Napa	24.3	.9	21.4	.6	55.4	1.1	+31.1	+128.0
San Francisco	576.3	20.8	611.4	15.9	732.3	14.0	+156.0	+27.1
San Mateo	240.9	8.7	367.6	9.5	477.2	9.1	+236.3	+98.1
Santa Clara	631.6	22.8	1,188.5	30.8	1,907.5	36.3	+ 1,275.9	+202.0
Solano	21.2	.8	25.5	.7	46.3	.9	+25.1	+118.4
Sonoma	48.8	1.8	52.8	1.4	79.7	1.5	+30.9	+63.3
Bay Area	2,775.3	100	3,855.8	100	5,248.9	100	+2,473.6	+89.1

Source: U. S. Bureau of the Census, Census of Manufactures, Area Statistics, California, 1958, 1963 and 1967.

*Amounts expressed in millions of 1970 dollars.

Table V

Value Added Per Employee in San Francisco
and the Bay Area, 1958, 1967, and 1967*

County	1958	1963	1967	Dollar Change Per Employee 1958-1967	% Change 1958-1967
Alameda	11,280	13,578	16,161	+ \$4,881	+ 43.3
Contra Costa	14,894	18,816	20,272	+ 5,378	+ 36.1
Marin	10,535	12,100	15,861	+ 9,898	+ 50.6
Napa	9,205	8,560	19,103	+ 5,326	+ 107.5
San Francisco	8,825	10,105	14,055	+ 5,230	+ 59.3
San Mateo	9,915	12,418	14,638	+ 4,723	+ 47.6
Santa Clara	11,713	12,227	15,856	+ 4,143	+ 35.4
Solano	11,689	12,750	14,468	+ 2,779	+ 23.8
Sonoma	9,171	10,352	12,854	+ 3,683	+ 40.2
Bay Area	\$10,928	\$12,727	\$15,881	+ \$4,953	+ 45.3

Source: U. S. Bureau of the Census, Census of Manufactures, Area Statistics, California, 1958, 1963 and 1967.

*Amounts expressed in 1970 dollars.

Table VI

New Capital Expenditures in Manufacturing for San Francisco and the Bay Area: 1958, 1963 and 1967

County	Total Expenditures (in millions of 1970 dollars)						Expenditures Per Employee		
	1958	% Region	1963	% Region	1967	% Region	1958	1963	1967
Alameda	\$39.9	20.2	\$86.0	33.2	\$66.9	18.0	\$556	\$1,146	\$837
Contra Costa	75.6	38.3	59.1	22.8	74.5	20.1	2,785	2,050	2,508
Marin	N/A	---	1.1	.4	1.8	.5	N/A	540	500
Napa	1.9	1.0	1.6	.6	3.0	.8	8	648	1,034
San Francisco	21.7	11.0	23.9	9.2	29.8	8.0	332	394	572
San Mateo	16.3	8.2	17.9	6.9	26.9	7.3	671	604	825
Santa Clara	36.8	18.6	64.3	24.8	164.2	44.3	682	678	1,365
Solano	.8	.4	1.5	.6	N/A	---	441	734	N/A
Sonoma	4.6	2.3	3.8	1.5	3.6	1.0	865	741	581
Bay Area	\$197.6	100	\$259.2	100	\$370.7	100	\$783	\$862	\$1,058

Source: U. S. Bureau of the Census, Census of Manufactures, Area Statistics, California, 1958, 1963 and 1967.

San Francisco's value added per employee also grew during the period, from \$8,825 in 1958 to \$14,055 in 1967. This was an increase of 59.3 percent, the greatest among Bay Area counties. The relative age and obsolescence of the city's plant facilities, however, appear to have taken their toll on local production efficiency as the city consistently fell below regional value added per employee averages in 1958, 1963 and 1967. In 1967, Contra Costa County had the highest value added per employee, \$20,272, followed by Napa, Alameda, Marin and Santa Clara counties.

Capital Expenditures in Manufacturing

Lastly, a valuable measure of San Francisco's economic viability and investment vitality is found in new capital expenditures in manufacturing. Recorded by the U. S. Bureau of the Census, this indicator measures new capital expenditures for manufacturing establishments (investments on plant alterations, new additions, machinery and equipment) in San Francisco and the region.

Investment in San Francisco manufacturing establishments grew by 37.3 percent between 1958 to 1967, but at a rate far behind that of the Bay Area as a whole. Bay Area counties invested a total of \$371 million in manufacturing capacity in 1967, an increase of 88.6 percent, with San Francisco accounting for only eight percent of the region's growth. Santa Clara County clearly dominated the investment field with \$164 million in new capital expenditures in 1967, a growth of 396.2 percent for the period. Following Santa Clara County in total investments for 1967 were Contra Costa and Alameda counties.

WHOLESALE TRADE

Wholesaling, San Francisco's second leading industrial sector had 2,336 establishments in 1972, employing 41,618 persons. As in manufacturing, employment in wholesale trade has been declining. Between 1953 and 1972, the number of persons employed in wholesale trade dropped by 7,631, or 15.5 percent. In the eight Bay Area counties outside San Francisco, wholesale trade has grown rapidly with employment gains of 39,720, or 167.6 percent for the period. Despite this trend, San Francisco still is the dominant wholesale center in the region, holding 39.6 percent of the wholesale trade employment. This share, however, is down considerably from the 54 percent the city held in 1966. Thus, the decline of San Francisco's wholesale employment has been most severe in recent years.

Table VII

Wholesale Trade Employment in San Francisco
and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
50	Bay Area (Total)	72,953	100	105,042	100	+ 32,089	+ 43.98
50	Bay Area Excluding SF (Total)	23,704	32.49	63,424	60.37	+ 39,720	+167.56
50	San Francisco (Total)	49,249	67.50	41,618	39.62	- 7,631	- 15.49
501	Motor Vehicles & Auto Equipment	----	----	1,697	----	----	----
502	Drugs, Chemicals, & Allied Products	----	----	1,281	----	----	----
503	Dry Goods & Apparel	----	----	1,365	----	----	----
504	Groceries & Related Products	----	----	5,840	----	----	----
505	Farm Products & Related Materials	----	----	141	----	----	----
506	Electrical Goods	----	----	3,454	----	----	----
507	Hardware, Plumbing & Heating Equipment	----	----	1,655	----	----	----
508	Machinery, Equipment & Sales	----	----	7,686	----	----	----
509	Misc. Wholesalers	----	----	13,597	----	----	----
---	Admin. & Auxiliaries	----	----	4,902	----	----	----

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

Wholesale trade employment is dominated by four general categories: miscellaneous wholesalers (SIC 509), machinery, equipment and supplies (SIC 508), groceries and related products (SIC 504), and electrical goods (SIC 506). Together, they accounted for 73.5 percent of total 1972 wholesale trade employment in San Francisco.

Wholesale trade employment is concentrated in the city's downtown and South of Market areas. Despite a lack of off-street loading facilities, the blocks between Market Street and the Southern Pacific railroad tracks contain an especially heavy concentration of wholesale establishments, occupying, for the most part, buildings now several decades old. The condition of San Francisco's wholesale facilities, however, has improved slightly with the recent construction of new warehouses east of Potrero Hill and in the South Bayshore area.

San Francisco's role as the region's finance and administration center has probably helped to reduce the rate of decline of wholesale employment. Many wholesalers carry no stock and are, in this respect, virtually an office function similar to other downtown office activities. In addition, the proximity to San Francisco's financial district markets has kept many wholesalers in the city. Further support comes from the ever-growing tourist industry with its conventions, restaurants and hotels, and from the port with its related activities.

TRUCKING AND WAREHOUSING

Included in this function are local and long distance trucking, public warehousing (including raw materials, all kinds of commercial products and household goods) and motor freight terminals. San Francisco has shared only modestly in the regional growth of trucking and warehousing. Employing 6,034 persons in 1953, San Francisco trucking and warehousing gained only 77 employees by 1972, an increase of 1.3 percent. In the Bay Area, on the other hand, employment in this category has steadily increased from 14,349 in 1953 to 24,115 in 1972 -- an increase of 9,766 jobs or 68.1 percent. Alameda County now leads in trucking and warehousing employment with 8,821 employees or 36.57 percent of the region's employment in this category. San Francisco's share of the region's employment has dropped from 42 percent in 1953 to 25.3 percent in 1972.

Table VIII

Trucking and Warehousing Employment in San Francisco
and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
42	Bay Area (Total)	14,349	100	24,115	100	+9,766	+ 68.06
42	Bay Area Excluding S.F. (Total)	8,315	57.94	18,004	77.65	+9,689	+116.52
42	San Francisco (Total)	6,034	42.05	6,111	25.34	+77	+1.27

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

Many of San Francisco's trucking and warehousing facilities are located near the waterfront for easy access to cargo arriving at the port. In the Northern Waterfront area, however, a number of facilities have ceased to operate. In general, changes in shipping and marketing habits, growing obsolescence of old warehouses, a shift of some port activities to the Southern Waterfront, and increased land values all have helped to bring about two major changes: (1) gradual removal of trucking operations from the northern part of the city to industrial areas in the southeastern part, and (2) conversion of old warehouses to commercial use, and construction of new storage facilities in the southeastern industrial areas. The growth of port facilities in other parts of San Francisco Bay, however, has reduced the city's regional importance in this industry and has resulted in Alameda County's emergence as the trucking and warehousing center of the region.

RAIL AND WATER TRANSPORTATION

Rail Service

Early phases in the development of railroads to serve the West focused on San Francisco as the rail center of the Pacific Coast, the terminus for railroads leading to the more populated areas in the East. However, San Francisco never became a major railroading city. Railroad activity has always been concentrated, instead, in California's Central Valley, where there is direct access to a great variety of farm products. As a result, Sacramento, Stockton and Fresno emerged as Northern California's most important railroad towns.

Considering just the rail centers of the Bay Area, San Francisco is still of secondary importance. The city is the terminus only of a relatively unimportant route of the Southern Pacific; the other, more important rail lines terminate in the East Bay. Tracks have steadily been removed from the city and there is no railroad yard of great consequence (in terms of both activity and land area) within the city limits.

Waterborne Commerce

In water transportation, San Francisco has retained a position of leadership among the general cargo ports of the West Coast. From the standpoint of tonnage alone, however, the Port of San Francisco handles a relatively

small proportion of all waterborne cargo passing through the Golden Gate and San Francisco Bay, and the Port's share of regional traffic has been declining over the years. Most of the total tonnage is bulk cargo or commodities handled largely by the other Bay Area ports and ports such as Stockton and Sacramento. It is the value of the goods handled, rather than the tonnage, that makes San Francisco an important port.

Existing and Planned Facilities

San Francisco's Port facilities are primarily concentrated in the central waterfront from China Basin to India Basin. Facilities exist in the Northern Waterfront as well, but these play a relatively insignificant role in overall water transportation. While the city is principally a general cargo port, specialized facilities handling containerized and bulk cargo do exist. The Port is well served by freight terminals designed to handle special commodities and imported automobiles, and it has the only passenger facilities in the Bay Area.

Deep-water piers are served by rail, but the Port has direct service from only one line-haul railroad, the Southern Pacific. Connections are available to the Atchison, Topeka, and Santa Fe Railway, Northwestern Pacific Railroad and Western Pacific Railroad, but access to these rail systems is not direct as they have no land route leading into the city. The Belt Line Railroad serves as a local switching line and provides an interchange to the other more important rail lines.

San Francisco has neither the quality industrial land nor the access to major rail transportation that would make development of large bulk facilities feasible. The Port can, however, expect demand for new containerized general cargo handling systems to process cargo for distribution within the region.

The Port's physical characteristics may help it capitalize on the developing containerized cargo market. The natural water depth adjacent to the Port is greater than at other Bay Area port locations, a significant competitive advantage in serving large vessels. Additionally, a reserve of land, some 183 acres suitable for container facilities, exists in the Southern Waterfront area. In all, the Port has nearly 600 acres of property under its jurisdiction, comprising almost two percent of the total area of the city. Included in the Port property

are the docks and warehouses along the Bay waterfront between Aquatic Park and Islais Creek Channel, a number of blocks on the inland side of The Embarcadero, and the large waterfront parcel between Islais Creek Channel and India Basin.

Currently, container facilities are planned for the area between the Lash Terminal at Pier 96 and Islais Creek Channel at Pier 94, and at the proposed Pier 72. A freight terminal is also planned for India Basin to handle container and other related traffic.

Waterborne Commerce Activity

Since 1953, San Francisco employment in water transportation has declined by 27.5 percent. There were 6,852 people employed in 1972, down from 9,454 in 1953. In contrast, the surrounding counties of the Bay Area increased their employment by 324 percent during the 1953-1972 period. Still, San Francisco remains the major employer in the region for this category, holding 86.5 percent of the region's total employment in water transportation.

Actual traffic being handled by San Francisco, however, has declined at a steady rate. During the period 1950-1970, the city experienced a drop of 24 percent in total traffic. The category of waterborne commerce tonnage with the greatest decline was coastwise commerce (down 96 percent), followed by internal commerce (down 28.1 percent), ocean commerce (down 19.5 percent), and foreign exports (down 2.8 percent). One type of waterborne cargo experienced growth, however: foreign imports were up 61.5 percent between 1950 and 1970.

San Francisco still remains a dominant force in terms of the value of imports and exports handled. Adjusted value of total foreign commerce grew by 157.9 percent between 1950 and 1970, with the value of exports posting a growth of 265.6 percent. The other ports of the Bay Area harbor system also experienced growth in the value of shipments. During the same period, for instance, total foreign commerce grew by 239.8 percent for the region. Regional exports had the largest growth in value, up 262.6 percent.

Table IX
Water Transportation Employment in San Francisco
and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
44	Bay Area (Total)	10,178	100	9,922	100	-2,256	- 22.16
44	Bay Area Excluding S.F. (Total)	724	7.11	3,070	30.94	+2,346	+324.03
44	San Francisco (Total)	9,454	92.88	6,852	86.49	-2,602	- 27.52

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

Table X

Waterborne Commerce Tonnage for San Francisco and the Bay Area Harbor System:

1950 and 1970 (In Thousands of Short Tons)

Category	1950				1970				Percentage Change 1950-1970	
	Harbor System	% Region	S.F.	% Region	System	% Region	S.F.	% Region	Harbor System	S.F.
Total All Traffic	37,399	100	4,921	13.2	53,496	100	3,742	7.0	+ 43.0	-24.0
Total Foreign Commerce	3,401	100	1,491	43.8	12,847	100	1,883	14.7	+277.7	+26.3
Imports	1,033	100	675	65.3	6,254	100	1,090	17.4	+505.4	+61.5
Exports	2,368	100	816	34.5	6,593	100	793	12.0	+178.4	- 2.8
Total Coast- wise Commerce	20,531	100	895	4.4	26,795	100	37	.1	+ 30.5	-96.0
Total Ocean Commerce	23,932	100	2,386	10.0	39,642	100	1,920	4.8	+ 65.6	-19.5
Total Internal Commerce	13,467	100	2,535	18.8	13,854	100	1,822	13.2	+ 2.9	-28.1

Source: U. S. Army Corps of Engineers, San Francisco Bay Area In-Depth Study, June, 1973

Table XI

Value of Imports and Exports for San Francisco
and the Bay Area Harbor System: 1950 and 1970

(In Thousands of 1970 Dollars)

Category	1950				1970				Percentage Change 1950-1970	
	Harbor System	% Region	S.F.	% Region	Harbor System	% Region	S.F.	% Region	Harbor System	S.F.
Total Foreign Commerce	\$823,973	100	\$559,987	68.0	\$2,800,033	100	\$1,444,180	51.6	+239.8	+157.9
Imports	\$436,107	100	\$367,662	84.3	\$1,393,528	100	\$ 741,043	53.2	+219.5	+101.6
Exports	\$387,866	100	\$192,325	49.6	\$1,406,505	100	\$ 703,137	50.0	+262.6	+265.6

Source: U. S. Army Corps of Engineers, San Francisco Bay Area In-Depth Study, June, 1973.

Table XII

Waterborne Commerce Tonnage by Commodities, 1950-1970

SAN FRANCISCO HARBOR

(Thousands of Short Tons)

Commodity Group	1950	1955	1960	1965	1970
<u>Foreign Exports</u>					
Food Products	259	352	183	233	190
Farm Products	68	95	93	162	121
Chemicals	41	45	35	82	55
Petroleum Products	63	54	39	54	67
Metallic Ores	84	56	34	20	0
Department of Defense Controlled Cargo	179	45	5	0	6
Miscellaneous	<u>122</u>	<u>154</u>	<u>145</u>	<u>243</u>	<u>354</u>
Subtotal, Exports	816	801	534	794	793
<u>Foreign Imports</u>					
Farm Products	160	202	218	176	154
Pulp and Paper Products	80	132	93	180	242
Coffee and Cocoa	138	140	128	164	160
Food Products	173	162	185	117	121
Metallic Ores	83	90	157	65	6
Miscellaneous	<u>41</u>	<u>134</u>	<u>170</u>	<u>373</u>	<u>403</u>
Subtotal, Imports	675	860	951	1,075	1,090
Total, Foreign Commerce	1,491	1,661	1,485	1,869	1,883
<u>Coastwise Shipments</u>					
Petroleum Products	64	90	95	88	5
Food Products	257	130	93	33	1
Farm Products	14	15	3	17	0
Machinery & Transportation Equipment	10	24	34	16	7
Primary Metals	18	15	14	14	0
Chemicals	7	5	12	9	2
Miscellaneous	<u>82</u>	<u>119</u>	<u>66</u>	<u>54</u>	<u>10</u>
Subtotal, Shipments	452	398	317	231	25

Table XII (Continued)

Waterborne Commerce Tonnage by Commodities, 1950-1970

SAN FRANCISCO HARBOR

(Thousands of Short Tons)

Commodity Group	1950	1955	1960	1965	1970
<u>Coastwise Receipts</u>					
Primary Metals	222	213	344	157	0
Food Products	81	64	57	27	10
Petroleum Products	8	10	3	54	0
Miscellaneous	<u>132</u>	<u>162</u>	<u>194</u>	<u>22</u>	<u>2</u>
Subtotal, Receipts	443	449	598	260	12
Total, Coastwise Commerce	895	847	915	491	37
Total, Ocean Commerce	2,386	2,508	2,400	2,360	1,920
<u>Internal Shipments</u>					
Sand, Gravel, Rock	50	0	0	0	0
Petroleum Products	11	20	30	3	47
Miscellaneous	<u>97</u>	<u>40</u>	<u>16</u>	<u>22</u>	<u>6</u>
Subtotal, Shipments	158	60	46	25	53
<u>Internal Receipts</u>					
Petroleum Products	2,069	1,568	1,860	2,340	1,755
Non-Metallic Minerals	2	7	2	231	11
Food Products	232	59	34	13	2
Stone, Clay, Glass	14	12	5	10	0
Miscellaneous	<u>60</u>	<u>25</u>	<u>11</u>	<u>7</u>	<u>1</u>
Subtotal, Receipts	2,377	1,671	1,912	2,601	1,769
Total, Internal Commerce	2,535	1,731	1,958	2,626	1,822
TOTAL ALL TRAFFIC, SAN FRANCISCO HARBOR	4,921	4,239	4,358	4,986	3,742

Source: U. S. Army Corps of Engineers, San Francisco Bay Area In-Depth Study, June, 1973.

Table XIII

Value of Imports and Exports, 1950-1970*
(Thousands of Dollars)

SAN FRANCISCO HARBOR

Commodity Group	1950	1955	1960	1965	1970
<u>Foreign Exports</u>					
Food Products	\$ 38,210	\$ 49,216	\$ 48,519	\$ 80,912	\$ 73,759
Farm Products	23,779	17,237	53,821	13,586	19,169
Chemicals	9,857	15,698	19,314	19,397	61,359
Petroleum Products	1,706	3,248	3,680	4,609	5,011
Metallic Ores	33,755	1,650	4,988	5,219	5,660
Department of Defense					
Controlled Cargo	N/A	N/A	N/A	N/A	N/A
Miscellaneous	22,031	105,901	135,904	217,396	538,179
Subtotal, Exports	\$129,338	\$192,950	\$266,226	\$341,119	\$ 703,137
<u>Foreign Imports</u>					
Farm Products	\$ 49,762	\$ 23,311	\$ 75,523	\$ 41,716	\$ 28,703
Pulp & Paper Products	7,265	15,302	12,204	4,458	33,210
Coffee and Cocoa	120,600	154,985	94,852	123,192	138,734
Food Products	31,865	32,596	53,490	88,531	89,991
Metallic Ores	9,696	2,228	10,781	8,478	7,560
Miscellaneous	28,063	55,294	131,705	253,452	442,845
Subtotal, Imports	\$247,251	\$283,716	\$378,555	\$519,827	\$ 741,043
Total, Foreign Commerce	\$376,589	\$476,666	\$644,781	\$860,946	\$1,444,180

Source: U. S. Army Corps of Engineers, San Francisco Bay Area In-Depth Study, June, 1973.

*Values reflected in table have not been adjusted to constant dollars.

Table XIV

Categories of Commodity Movement, 1960, 1965 and 1970

SAN FRANCISCO HARBOR

Commodity Group	Method of Commodity Movement, 1,000 Tons				Total Cargo
	Petroleum & Liquid Bulk	Dry Bulk Cargo	General Cargo	Containerized & LASH Cargo	
1960					
<u>Ocean Commerce</u>					
Food Products			518		518
Farm Products		204	110		314
Chemicals			47		47
Petroleum Products	137				137
Metallic Ores		191			191
Dept. of Defense			5		5
Pulp & Paper			93		93
Coffee, Cocoa			128		128
Mach. & Equip.			34		34
Primary Metals			358		358
Miscellaneous	41		534		575
Subtotal	178	395	1,827	0	2,400
<u>Internal Traffic</u>					
Petroleum Products	1,890				1,890
Non-Metallic Minerals		2			2
Food Products			34		34
Stone, Clay, Glass			5		5
Miscellaneous			27		27
Subtotal	1,890	2	66	0	1,958
<u>Total Traffic</u>	2,068	397	1,893	0	4,358

Table XIV (Continued)

Categories of Commodity Movement, 1960, 1965 and 1970

SAN FRANCISCO HARBOR

Commodity Group	Method of Commodity Movement, 1,000 Tons				Total Cargo
	Petroleum & Liquid	Dry Bulk Cargo	General Cargo	Containerized & LASH Cargo	
1965					
<u>Ocean Commerce</u>					
Food Products			410		410
Farm Products		310	45		355
Chemicals			91		91
Petroleum Products	196				196
Metallic Ores		85			85
Dept. of Defense					0
Pulp & Paper	6		174		180
Coffee, Cocoa			164		164
Mach. & Equip.			16		16
Primary Metals			171		171
Miscellaneous			692		692
Subtotal	202	395	1,763	negligible	2,360
<u>Internal Traffic</u>					
Petroleum Products	2,343				2,343
Non-Metallic Minerals		231			231
Food Products			13		13
Stone, Clay, Glass			10		10
Miscellaneous			29		29
Subtotal	2,343	231	52	0	2,626
<u>Total Traffic</u>	2,545	626	1,815	negligible	4,986

Table XIV (Continued)

Categories of Commodity Movement, 1960, 1965 and 1970

SAN FRANCISCO HARBOR

Commodity Group	Method of Commodity Movement, 1,000 Tons				Total Cargo
	Petroleum & Liquid	Dry Bulk Cargo	General Cargo	Containerized & LASH Cargo	
1970					
<u>Ocean Commerce</u>					
Food Products			225	97	322
Farm Products		183	78	18	279
Chemicals			40	17	57
Petroleum Products	72				72
Metallic Ores		6			6
Dept. of Defense				6	6
Pulp & Paper	21		221		242
Coffee, Cocoa			160		160
Mach. & Equip.			7		7
Primary Metals					0
Miscellaneous		2	526	241	769
Subtotal	93	191	1,257	379	1,920
<u>Internal Traffic</u>					
Petroleum Products	1,802				1,802
Non-Metallic Minerals		11			11
Food Products			2		2
Stone, Clay, Glass					0
Miscellaneous			7	negligible	7
Subtotal	1,802	11	9		1,822
Total Traffic	1,895	202	1,266	379	3,742

Source: U. S. Army Corps of Engineers, San Francisco Bay Area In-Depth Study, June 1973.

Table XV

Commodity Origins and Destinations, 1970

SAN FRANCISCO HARBOR

Commodity Group	Tons (1,000)	Origin	Destination
<u>Foreign Exports</u>			
Food Products	190	118 San Francisco	Far East
		13 San Francisco	Asia
		50 San Francisco	Europe
		7 San Francisco	South America
		2 San Francisco	Australia, Pacific Islands
Farm Products	121	102 San Francisco	Far East
		19 San Francisco	Asia
Chemicals	55	7 San Francisco	Australia
		2 San Francisco	South America
		21 San Francisco	Asia
		8 San Francisco	Far East
		17 San Francisco	Africa
Petroleum Products	67	San Francisco	Far East
Dept. of Defense Cargo	6	San Francisco	Far East
Miscellaneous	354	146 San Francisco	Far East
		31 San Francisco	Australia
		13 San Francisco	South America
		62 San Francisco	Asia
		23 San Francisco	Europe
		79 San Francisco	Other Countries
<u>Foreign Imports</u>			
Farm Products	158	38 Japan	San Francisco
		120 Philippine Islands	San Francisco
Pulp and Paper	242	British Columbia	San Francisco
Coffee and Cocoa	160	94 Central and South America	San Francisco
		12 Australia	San Francisco
		9 Asia	San Francisco
		45 Africa	San Francisco
Food Products	121	10 Far East	San Francisco
		109 Asia	San Francisco
		2 Europe	San Francisco
Metallic Ores	6	South America	San Francisco
Miscellaneous	403	195 Far East	San Francisco
		12 Canada	San Francisco
		46 Mexico	San Francisco
		71 Europe	San Francisco
		12 Africa	San Francisco
		42 Asia	San Francisco
		14 Australia	San Francisco
		11 Other Countries	San Francisco

Table XV (Continued)

Commodity Origins and Destinations, 1970

SAN FRANCISCO HARBOR

Commodity Group	Tons (1,000)	Origin	Destination
<u>Coastwise Shipments</u>			
Petroleum Products	5	San Francisco	Hawaii
Food Products	1	San Francisco	Hawaii
Machinery & Equipment	7	San Francisco	Hawaii
Chemicals	2	San Francisco	Hawaii
Miscellaneous	10	San Francisco	Hawaii
<u>Coastwise Receipts</u>			
Food Products	10	Coastal (North)	San Francisco
Miscellaneous	2	Gulf States	San Francisco
Subtotal, Ocean Commerce	1,920		
<u>Internal Shipments</u>			
Petroleum Products	47	San Francisco	East Bay Area
Miscellaneous	6	San Francisco	Stockton
<u>Internal Receipts</u>			
Petroleum Products	1,755	Bay Area Refineries	San Francisco
Non-Metallic Minerals	11	San Francisco	Miscellaneous Bay Ports
Food Products	2	From Sea	San Francisco
Miscellaneous	1	San Francisco	Napa
Subtotal, Internal Traffic	1,822		
TOTAL TRAFFIC	3,742		

Source: U. S. Army Corps of Engineers, San Francisco Bay Area
In-Depth Study, June 1973.

Impact of Port Operations

The Mayor's Port Committee estimated that in 1970 San Francisco's maritime commerce directly accounted for at least 20,000 jobs with a payroll of \$244 million. An estimated 10,000 of the jobs were provided to San Francisco residents with a payroll of \$122 million, the spending of which further stimulated the economy to support roughly 14,000 additional jobs in the city with a payroll of \$135 million. In all, roughly 10 percent of all jobs in the city are attributed directly or indirectly to operation of the Port.

Port operations also contribute to the configuration of economic growth and affect the location of industry. Most of the Bay Area's industrial centers are close to port facilities and deep water channels. Access to water transportation for shipping and receiving raw materials and manufactured products is an important location criterion for many industries, and this criterion will increase in importance due to a growing national reliance on imports for valuable resources. Port facilities also attract a great number of ancillary industries servicing maritime accounts.

Planned Port facilities and the probability of further Port investment in the central waterfront area will have a significant effect on economic and physical development patterns in the city. Capital improvements of the kind previously mentioned for the area between Piers 72 and 96 may be used to influence the rate and direction of future industrial development, to improve marginal industrial areas, and to free parts of Northern Waterfront for commercial use. A coordinated approach which recognizes the Port's competitive position in the region and emphasizes modernization of Port facilities for special purposes (such as light shipments of high value and containerized cargo for regional distribution) will be necessary to promote industrial development objectives. Transportation improvements may also be necessary to provide a network which allows good access and minimizes the costs of distribution.

TRANSPORTATION BY AIR

This employment category includes activities directly involved in passenger and freight transportation by air, as well as a number of ancillary air transportation services. Air transportation has been the most active employment category in the transportation sector for both the region and San Francisco.

Table XVI
 Transportation by Air Employment in San Francisco
 and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
45	Bay Area (Total)	10,318	100	27,047	100	+ 16,729	+ 162.1
45	Bay Area Excluding San Francisco	9,741	94.4	21,882	80.9	+ 12,141	+ 124.6
45	San Francisco	577	5.6	5,165	19.1	+ 4,588	+ 795.1

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

From 1953 to 1972, San Francisco employment in air transportation grew from 577 to 5,165, an increase of 795.1 percent. Accordingly, the city's share of the region's employment in this category grew from 5.6 percent in 1953 to 19.1 percent in 1972. The region also experienced strong growth in this area. Air transportation for the combined nine-county Bay Area grew from 10,318 in 1953 to 27,047 in 1972, or 162.1 percent. San Francisco accounted for 27.4 percent of the region's growth during the period.

LOCAL AND INTERURBAN PASSENGER TRANSIT

The local and interurban passenger transit sector includes a wide variety of activities involved in passenger transportation: local and suburban transit, taxicabs, highway passenger transit, charter services and limousine rentals, school buses, and terminal facilities. San Francisco is the center for passenger transit for the Bay Area and thus holds nearly three times as much employment in this category than its closest rival, Alameda County.

Statistics for this category are incomplete over the years, and therefore do not reveal information on the rate of growth of employment in the San Francisco passenger transit industry. But, judging from the recorded increase in passenger transit firms, from two in 1953 to 646 in 1972, employment growth has probably been substantial.

Transportation systems are a dominant feature in the physical, social and economic life of the city and the surrounding region. Emphasis on transit ridership is greater in San Francisco than in other Bay Area counties. In 1970, an estimated 35.3 percent of San Francisco's resident workforce rode rail or bus transit to their work destinations; this compares with 15.2 percent for the metropolitan area as a whole.* Internally, San Francisco has one of the most intensive public transit system in the nation. Some 67 Muni transit lines, covering 697 line miles, carry an estimated 550,000 passenger trips every weekday.

*American Institute of Planners, Urban Transportation Fact Book, Part II, 1974. Metropolitan area was the five-county San Francisco-Oakland Standard Metropolitan Statistical Area.

Table XVII

Local and Interurban Passenger Transit

Employment in San Francisco and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
41	Bay Area (Total)	2,037	100	10,276	100	+ 8,239	+ 404.5
41	Bay Area Excluding San Francisco	N/A	----	4,859	47.3	----	----
41	San Francisco	N/A	----	5,417	52.7	----	----

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

In 1972, an estimated 5,417 persons were employed in San Francisco in the passenger transit industry. This represents 52.7 percent of total employment in the category for the entire nine-county Bay Area. Growth in the passenger transit industry for the region is estimated at 404.5 percent for the 1953 to 1972 period.

CONTRACT CONSTRUCTION

Contract construction includes establishments contracting to do new work, alterations, repairs and additions. Construction in this category ranges from office buildings and residences to public facilities such as transportation and waste disposal systems.

As the contract construction center of the Bay Area, San Francisco in 1972 had a total of 888 firms employing 21,615 persons. This figure represents 25 percent of the region's total employment for the category. Despite the city's dominance in the area, its employment was down 10 percent during the period 1953 to 1972, and San Francisco's share of the region's construction employment dropped significantly from the 34.8 percent held in 1953. The counties emerging as competitors in the field include Santa Clara and Alameda, each having roughly 20 percent of the region's employment.

While San Francisco's contract construction industry has experienced small declines in employment over the last two decades, office building growth has undoubtedly kept this industry from suffering a rate of decline similar to that of other industrial categories. Further support has come from construction of BART facilities, as well as hotels and hotel additions.

LOCATIONAL CLUSTERING

Some types of industrial establishments have a tendency to cluster in certain parts of the city's industrialized area. This clustering is the result of mutually held locational requirements.*

*Information on locational clustering is taken from Arthur D. Little, Inc., Community Renewal Program, Technical Bulletin No. 5, 1965.

Table XVIII
Contract Construction Employment in San Francisco
and the Bay Area, 1953 and 1972

SIC No.	Category	1953	% Region	1972	% Region	Numerical Change	Percentage Change
15- 17	Bay Area (Total)	69,002	100	86,360	100	+ 17,358	+ 25.15
15- 17	Bay Area Excluding San Francisco (Total)	44,978	65.18	64,745	74.97	+ 19,767	+ 43.94
15- 17	San Francisco Total	24,024	34.81	21,615	25.02	- 2,409	- 10.02

Source: U. S. Department of Commerce, County Business Patterns, 1953 and 1972.

1. Contract Construction. Establishments of this industry, generally requiring large yard areas or an excess of land area over floor space, are concentrated in the South of Market (administrative units), Central Basin-Islands Creek, and Bayview Districts. There they find an abundance of low-cost floor space with larger land parcels for storage of supplies and equipment.

2. Food Processors. Establishments engaged in food processing are generally concentrated in areas where there is easy access to the waterfront in order to receive food-stuffs, and where there are large amounts of floor space at a competitive rate. Thus, the South of Market, Bayview and Central Basin-Islands Creek Districts have the highest concentrations of food processing establishments.

3. Apparel Manufacturing. Most of the city's apparel manufacturing is found in the Northeast (Chinatown), South of Market, and Mission Districts, with the South of Market District clearly the leading area. The need for inexpensive, nonspecialized industrial space and accessibility to the downtown for product marketing has drawn the garment makers to the close-in industrial areas of the city.

4. Printing and Publishing. Establishments of this industry are concentrated in the downtown and adjacent districts. These close-in areas satisfy the industry's desire for low-cost space and for proximity to institutional accounts located in the downtown commercial areas. Although the South of Market District has the largest concentration of printing and publishing establishments, the Northeast, Downtown and Mission Districts, also have significant portions.

5. Fabricated Metal Products and Non-electrical Machinery. These establishments have a less compelling need for downtown locations than do other industries. Thus, they tend to be found in outlying areas where space is less expensive and where larger land parcels exist for extensive plant operations, including production, loading and off-street parking. The industrial areas with the greatest concentration of these manufactures are the Central Basin-Islands Creek and Bayview Districts. The Mission and South of Market Districts also hold significant portions of these industries.

6. Wholesale Trade. Most wholesalers desire to be located near the downtown where their markets exist. Thus, wholesale trade establishments are concentrated in the South of Market District. The outlying industrial areas

provide low-cost space for storage of wholesale stocks. Many wholesalers have shown a preference for segregated administrative and stock functions, situating administrative offices close to downtown while maintaining stock warehouses in areas which minimize storage costs.

PHYSICAL CONDITION

Because San Francisco is an old city, much of its industry occupies aged buildings. In fact, a sample of industries taken by the Greater San Francisco Chamber of Commerce in 1967 revealed that 59 percent of the firms that responded occupied buildings constructed before 1930.* Although the age of structure alone is not an accurate measurement of condition, age often shows a strong correlation with deterioration and functional obsolescence and even the kinds of economic uses operating in any given area.

While the condition of San Francisco's commercial and industrial properties is generally sound, the amount of poor or mediocre floor space in the industrial areas poses a serious question concerning the future of the enterprises, persons employed, and buildings of the districts. This is particularly true in the South of Market, Central Basin-Islands Creek, and eastern Bayview areas. The lower South of Market District (Bryant-Brannan area) has perhaps the highest incidence of old, low-quality floor space. In the southeastern part of the city, the actual amount of deteriorated or obsolescent space is not remarkable, except in the eastern Bayview and India Basin areas. However, the presence of low-quality space in these areas tarnishes the image of the districts and acts as a deterrent to the utilization of a large amount of vacant land.

The building condition study of the 1964 Community Renewal Program, conducted by Arthur D. Little, Inc., revealed some interesting information on San Francisco's nonresidential properties. Consisting of an on-site inspection of nonresidential properties in the city, the study covered 1,057 blocks in the eastern third of San Francisco. Actual measures of condition were based on a variety of physical features of the individual properties, e.g., building age and maintenance, type of construction,

*Greater San Francisco Chamber of Commerce, Industrial Survey of San Francisco, 1968.

San Francisco is an old city, much of its history is contained in its buildings. In fact, a sample of the buildings taken by the Greater San Francisco Chamber of Commerce in 1927 revealed that 33 percent of the buildings were built before 1850.

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San Francisco is an old city, much of its history is contained in its buildings. In fact, a sample of the buildings taken by the Greater San Francisco Chamber of Commerce in 1927 revealed that 33 percent of the buildings were built before 1850.

While the condition of San Francisco's commercial and industrial properties is generally sound, the amount of poor or mediocre floor space in the industrial areas poses a serious question concerning the future of the city. This is particularly true in the South of Market, Central Business District, and eastern Bayview areas. The lower part of Market District (Central Business District) has been the center of the city's financial and commercial life for many years. The amount of deteriorated or obsolete space is not remarkable, except in the eastern Bayview and India Basin areas. However, the amount of deteriorated or obsolete space in these areas detracts the image of the district and acts as a deterrent to the attraction of a large amount of vacant land.

The building condition study of the 1927 Community Renewal Program, conducted by Arthur D. Little, Inc., revealed some interesting information on San Francisco's commercial properties. Consisting of an on-site inspection of 1,000 commercial buildings, the study revealed that 1,000 buildings in the market were based on a variety of physical features of the industrial properties.

condition of walls and foundations, special layout, and parking and loading space. The cumulative evaluation of all the physical attributes resulted in condition scores that provided a general measure of the structural soundness of the buildings surveyed.

Six condition classifications were developed for the purpose of comparison. Descriptive names were not given to these classifications; the various structural ratings were instead assigned a grade of one to six, with "one" representing the best condition and "six" the poorest. These numerical ratings provided a rank-order scale of those buildings having the highest number of required physical features to those with the lowest. Thus, a condition one rating would indicate a building which was considered "sound", with the required physical attributes for efficient plant operation, while a condition six rated building would typically lack a large number of essential features and be characterized by deteriorated outside walls, roof and foundation, broken windows and a lack of fireproofing.

Table XIX provides a summary of 1964 Condition Survey findings and indicates that the condition of San Francisco's commercial and industrial physical properties is generally good. Of total floor space surveyed 68 percent was rated in the top three classifications. By contrast, only 10 percent was classified in the poorest category.

The area designated on Map III as Upper South of Market had the most serious condition problem in 1964. Rated as condition six, the poorest category, were 3,622,500 square feet of floor space, 18 percent of the total. Over half the total amount of commercial and industrial space classified as condition six in the industrialized areas was found in the Upper South of Market area. Rated as condition five were 3,422,000 square feet, or 17 percent of the total. A great deal of space was also put in the higher categories, but much of the space included in these classification was in the large, substantial office buildings along the south side of Market Street and on New Montgomery Street.

As Table XIX shows, the other industrial areas having serious condition problems, with between 20 and 30 percent of their commercial and industrial floor space rated as either condition five or six, were:

Bryant-Brannan	28%
Islais Creek	24%
India Basin	22%
Bayview East	22%

The industrial areas with better than 60 percent of the total floor space in either category one or two, the top two classifications, were:

Bayview West	94%
Candlestick	82%
Northern Mission	69%
Central Basin	62%
Bayview East	61%

The Bayview West is as close as San Francisco comes to a model industrial area. The well-maintained buildings and grounds -- some attractively landscaped -- are a sharp contrast to the areas to the north and east.

San Francisco has been fortunate in that much of its marginal industrial space has not gone unused. Certain industries have made good use of space that might be considered substandard for many other purposes. As mentioned in the section on LOCATIONAL CLUSTERING, printers and apparel manufactures make extensive use of such space, as do wholesalers and special trade contractors. So long as buildings in substandard condition do not become dilapidated and unfit for occupancy, there is a reasonable likelihood of their use by certain industries. In the Northeastern and South of Market Districts, a sizeable number of "incubator industries" operate in such quarters. The city can probably expect to follow the path of other densely developed urban areas as a prime location for infant industry in the region.

In the long run, however, deterioration and obsolescence will add to the decline of local industry. When facilities have outlived their economic usefulness -- through insufficient maintenance, unwillingness of the user to invest in modernization and structural alterations, or technological and other external changes -- businesses will move out. This is especially true for the larger, more



MAP III
PREDOMINANTLY INDUSTRIALIZED AREAS IN THE COMMERCIAL AND
INDUSTRIAL SURVEY OF SAN FRANCISCO - 1964

- 1 UPPER SOUTH OF MARKET
- 2 RINCON HILL
- 3 BRYANT - BRANNAN
- 4 CHANNEL
- 5 NORTHERN MISSION
- 6 EAST MISSION

- 7 CENTRAL BASIN
- 8 ISLAIS CREEK
- 9 INDIA BASIN
- 10 BAYVIEW WEST
- 11 BAYVIEW EAST
- 12 CANDLESTICK

Source: A.D. Little, Inc., "San Francisco Community Renewal Program" 1965

Table XIX CONDITION CLASSIFICATION OF COMMERCIAL AND INDUSTRIAL FLOOR SPACE
IN PREDOMINANTLY INDUSTRIALIZED AREAS OF SAN FRANCISCO - 1964

Area No.	Area Name	CONDITION 1		CONDITION 2		CONDITION 3		CONDITION 4		CONDITION 5		CONDITION 6		TOTAL	
		Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area	Square Feet (000)	% of Total Floor Space in the Area
1	Upper South of Market	3,781.0	18	3,291.0	16	3,587.0	17	2,894.0	14	3,422.0	17	3,622.5	18	20,597.5	100
2	Rincon Hill	3,829.0	35	2,031.5	19	2,101.5	19	962.0	9	1,088.0	10	885.5	8	10,897.5	100
3	Bryant- Brannan	1,809.0	21	2,486.5	28	1,300.0	15	766.5	9	1,756.0	20	685.0	8	8,803.0	100
4	Channel	1,229.5	26	1,351.5	28	954.5	20	496.5	10	716.0	15	60.0	1	4,808.0	100
5	Northern Mission	3,483.0	49	1,382.0	20	686.5	10	820.0	12	316.5	4	388.0	5	7,076.0	100
6	East Mission	916.0	21	942.0	22	858.5	20	864.5	20	433.0	10	292.0	7	4,306.0	100
7	Central Basin	1,941.5	42	931.0	20	696.0	15	614.5	13	188.5	4	265.5	6	4,637.0	100
8	Islais Creek	1,599.5	26	1,673.5	27	870.0	14	586.5	9	924.5	15	526.0	9	6,180.0	100
9	India Basin	496.0	28	574.5	32	244.5	14	83.5	5	186.0	10	217.0	12	1,801.5	100
10	Bayview West	1,184.0	48	1,153.5	46	136.5	5	7.0	*	0	0	7.0	*	2,488.0	100
11	Bayview East	301.0	35	223.5	26	104.5	12	40.0	5	86.5	10	102.0	12	857.5	100
12	Candlestick	680.5	42	658.5	40	161.0	10	95.0	6	34.5	2	6.5	*	1,636.0	100
ALL AREAS		21,250.0	29	16,699.0	23	11,700.5	16	8,230.0	11	9,151.5	12	7,057.0	10	74,088.0	100

*Less than one percent of the total floor space in the area

Source: Arthur D. Little, Inc., San Francisco Community Renewal Program, Technical Paper No. 5, 1965.

successful firms requiring modern facilities as part of their mode of operation. These industries, furthermore, are usually the larger employers. Thus, the growing marginal space could have an extreme effect on industrial employment in the city. The impact of physical plant obsolescence on industrial employment will grow as deteriorating condition goes beyond the demand for marginal or near-marginal industrial space.

In addition to the suitability or soundness of the building itself for any of a number of industrial uses, a decisive factor in evaluating a building's usefulness, from the standpoint of purely economic alternatives, is often the alternative use of the site -- with or without the building -- for another purpose. Thus, an obsolescent industrial building may be converted to a shopping complex or office building, or torn down for a new structure. Industrial structures in or near the downtown area -- where market potential is highest due to commercial expansion -- are especially vulnerable in this kind of competition with other economic uses.

Much can be done in the way of aggressive, imaginative refurbishing of obsolescent industrial buildings for industrial re-use. Fireproofing, adding off-street parking and loading areas, installing new freight elevators, and like improvements are expensive, but they may be an economically sound approach to modernizing San Francisco's industrial facilities, making them competitive with the facilities in other parts of the region, and, thus curbing the steady decline of industrial employment in the city. More information is needed, however, as to how cost-effective such approaches may be.

FIRM MIGRATION

The physical condition of industrial structures is only one of the factors that go into a firm's decision to remain at its present site or seek a new location. Industries make discreet choices based on a variety of factors considered are: (1) adaptability of the building or site to changing technology, (2) availability of land for plant expansion, (3) more economical or publicly desirable use of the site for a different activity, (4) shifting markets, (5) accessibility to major transportation routes, and (6) public policies. The decline in the number of industrial establishments operating in San Francisco indicates that many firms can better satisfy their locational requirements outside the city.

Table XX

Number of Establishments in Selected Industries for
San Francisco and the Bay Area: 1953 and 1972

SIC No.	Category	San Francisco			Bay Area			Bay Area Excluding San Francisco		
		<u>1953</u> 1972	Numerical Change	% Change	<u>1953</u> 1972	Numerical Change	% Change	<u>1953</u> 1972	Numerical Change	% Change
...	Total Industry	<u>7,104</u> 5,745	-1,359	-19.1	<u>17,596</u> 21,199	+3,603	+20.5	<u>10,492</u> 15,454	+4,962	+47.3
15-	Contract	<u>1,567</u>			<u>6,592</u>			<u>5,025</u>		
17	Construction	888	-679	-43.3	6,107	-485	-7.4	5,219	+194	+3.9
19-		<u>2,141</u>			<u>4,925</u>			<u>2,784</u>		
39	Manufacturing	1,549	-592	-27.7	6,406	+1,481	+30.1	4,857	+2,073	+74.5
41	Local & Inter- urban Passenger Transit	<u>2</u> 646	+644	+32,200.0	<u>18</u> 792	+774	+4,300.0	<u>16</u> 146	+130	+812.5
42	Trucking & Warehousing	<u>288</u> 238	-50	-17.4	<u>951</u> 1,243	+292	+30.7	<u>663</u> 1,005	+342	+51.6
44	Water Trans- portation	<u>69</u> 52	-17	-24.6	<u>90</u> 98	+8	+8.9	<u>21</u> 46	+25	+119.0
45	Transportation By Air	<u>9</u> 36	+27	+300.0	<u>39</u> 118	+79	+202.6	<u>30</u> 82	+52	+173.3
50	Wholesale Trade	<u>3,028</u> 2,336	-692	-22.9	<u>4,981</u> 6,435	+1,454	+29.2	<u>1,953</u> 4,009	+2,140	+109.6

Source: U.S. Department of Commerce, County Business Patterns, 1953 and 1972.

In every major industry except passenger transit and transportation by air, the number of firms operating in San Francisco declined over the period 1953 to 1972. In some fields, such as contract construction and manufacturing, the decline has been dramatic, while in the remaining industries -- trucking and warehousing, water transportation, and wholesale trade -- the loss of firms has been significant. During the period 1953 to 1972, the city lost a total of 1,359 industrial establishments, an overall decline of 19.1 percent. The period saw contract construction and manufacturing decline at rates of 43.3 and 27.7 percent respectively.

In contrast, the eight counties of the Bay Area outside San Francisco experienced major growth in the number of industrial establishments. The period 1953 to 1972 saw industrial firms in these counties increase by 4,962, or 47.3 percent. The largest gainers included local and interurban passenger transit, up 130 firms or 812.5 percent; wholesale trade, 2,140 firms or 109.6 percent; and manufacturing, up 2,073 firms or 74.5 percent. Contract construction, the least active industrial for the period, increased by only 194 establishments, a gain of 3.9 percent. San Francisco still leads the region in total number of industrial establishments, 5,745, but Santa Clara County clearly experienced the greatest growth in the number of establishments for the period.

It should be emphasized, however, that no study has been made of the extent to which the loss of industrial establishments in San Francisco is due to the movement of firms from the city to areas outside. The number of business failures, consolidations, and voluntary liquidations could cloud a direct comparison between declines in San Francisco-based firms and the gains of surrounding counties. The rise in the number of industrial firms outside San Francisco, furthermore, results from new business formations as well as relocation of existing firms. Therefore, although information exists as to the general loss or growth of industry, an understanding to intra-regional firm migration patterns is not afforded by existing data.

Advantages and Disadvantages of San Francisco Location

San Francisco's locational advantages and disadvantages are inextricably related to the industrial mix of the Bay Area, the locational requirements of industry, and the locational attributes of the city versus those of the

surrounding region. The city's main advantages are central urban access, proximity to markets, and the quality of public services and utilities; the disadvantages relate to quality of floor space, cost and availability of land, and access to transcontinental transportation routes. In these latter respects, San Francisco is not competitive with the neighboring counties of the region.

In a survey conducted in 1967 by the Institute of Industrial Relations of the University of California at Berkeley,* the San Francisco-based firms (representing all major industries) responding to the questionnaire found the city's primary locational advantages to be: (1) proximity to markets, (2) desirability of site in relation to surrounding neighborhood, and (3) access to transportation. Of the total responses, nine percent stated that there were no major locational advantages in their San Francisco site. Other major advantages associated with San Francisco included quality of public services and utilities, local climate and amenities, and availability of business credit.

The survey also measured the primary disadvantages of San Francisco location listed by responding firms. The greatest disadvantages cited were space related, having to do with inadequate space for expansion, lack of reasonably priced land, or the age of the physical plant. Other disadvantages were cited in the following order: (1) poor site in relation to immediate neighborhood, (2) lack of access to transportation, (3) high wage rates, and (4) high taxes. Other disadvantages commonly associated with San Francisco, all verified by the 1964 Community Renewal Program, concerned labor-management relations, lack of off-street parking and loading space, insurance rates, lack of proximity to materials, and local building codes.

Industry-specific locational factors tend to favor the development of the most space-intensive uses in San Francisco. This tendency is due in part to proximity to commercial markets provided by the city, BART service to the downtown, and the lack of land for expansion. Thus, new construction is apt to intensify the floor space on a given amount of land.

*M. S. Gordon and M. Thal-Larson, Employer Policies in a Changing Market, Institute of Industrial Relations, University of California at Berkeley, 1969.

Table XXI

PRIMARY ADVANTAGE OF PRESENT LOCATION, BY MAIN ADDRESS OF ESTABLISHMENT -
BAY AREA EMPLOYER POLICY SURVEY, 1967

Primary Advantage	Total	San Francisco County	Oakland-Berkeley Area	Southern Alameda County	Northern San Mateo County	Southern San Mateo County	Santa Clara County	Contra Costa and Marin Counties
All establishments								
Number*	301	111	60	38	19	22	23	28
Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proximity of markets	37.5	39.6	30.0	44.7	31.6	40.9	39.1	35.7
Advantages relating to land,								
Space for expansion, etc.	6.6	4.5	8.3	7.9	10.5	9.1	4.3	7.1
Proximity to materials	4.7	---	6.7	7.9	---	---	4.3	21.4
Desirable site <u>re</u>								
immediate neighborhood	8.3	9.9	3.3	7.9	5.3	13.6	17.4	3.6
Good quality labor	5.3	5.4	1.7	5.3	5.3	13.6	18.7	3.6
Access to transportation	8.6	8.1	16.7	10.5	5.3	.4	---	7.1
Reasonably priced land	1.3	2.7	---	---	5.3	---	---	---
Proximity to educational/ research institutions	3.0	---	1.7	5.3	---	4.6	17.4	3.6
Other	18.6	20.7	23.3	7.9	36.7	9.1	8.7	17.9
No advantages	6.0	9.0	8.3	2.6	---	---	---	---

*Total excludes establishments not reporting a primary advantage.

Source: M.S. Gordon and M. Tahl-Larsen, "Employer Policies in a Changing Labor Market, Report of the San Francisco Bay Area Employer Policy Survey, 1967" (Berkeley: Insitiute of Industrial Relations, University of California, July 1969).

Table XXII

PRIMARY ADVANTAGE OF PRESENT LOCATION, BY MAJOR INDUSTRY GROUP -
BAY AREA EMPLOYER POLICY SURVEY, 1967

Primary Advantage	Total	Mining & Construc- tion	Manufac- turing, Durable	Manufac- turing Non- durable	Transpor- tation & Utilities	Trade	Finance, Insurance, and Real Estate	Services	Govern- ment
All establishments									
Number*	301	25	56	61	27	45	25	35	27
Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proximity to markets	37.6	36.0	39.2	47.4	40.8	49.0	44.0	22.9	3.7
Advantages relating to land, space for ex- pansion, etc.	6.6	---	5.4	11.5	3.7	6.7	8.0	2.9	11.1
Proximity to materials	4.7	8.0	3.6	11.5	---	4.4	---	---	3.7
Desirable site re im- mediate neighborhood	8.3	8.0	8.9	3.3	3.7	4.4	24.0	17.1	3.7
Good quality labor	5.3	---	14.3	4.9	---	---	---	5.7	11.1
Access to transportation	8.6	12.0	---	11.5	22.2	15.6	4.0	5.7	---
Reasonable priced land	1.3	4.0	---	---	3.7	2.2	---	2.9	---
Proximity to education/ research institutions	3.0	---	8.9	---	---	---	---	5.7	7.4
Other	18.6	8.0	5.4	4.9	25.9	13.3	20.0	28.5	55.6
No advantages	6.0	24.0	14.3	4.9	---	4.4	---	8.6	3.7

*Total excludes establishments not reporting a specific primary advantage.

Source: M. S. Gordon and M. Tahl-Larsen, "Employer Policies in a Changing Labor Market, Report of the San Francisco Bay Area Employer Policy Survey, 1967" (Berkeley: Institute of Industrial Relations, University of California, July 1969).

Table XXIII

PRIMARY DISADVANTAGE OF PRESENT LOCATION, BY MAIN ADDRESS OF ESTABLISHMENT -
BAY AREA EMPLOYER POLICY SURVEY, 1967

Primary Advantage	Total	San Francisco County	Oakland-Berkeley Area	Southern Alameda County	Northern San Mateo County	Southern San Mateo County	Santa Clara County	Contra Costa and Marin Counties
All establishments								
Number*	285	108	57	35	16	22	20	27
Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Lack of space for expansion, lack of reasonably priced land, or age of physical plant	20.6	27.9	24.6	14.3	12.6	18.2	20.0	---
High wage rates	13.0	6.5	17.5	14.3	---	9.1	25.0	29.7
Lack of access to transportation	10.5	12.0	8.8	11.4	12.5	13.6	5.0	7.4
Poor site <u>re</u> immediate neighborhood	9.8	14.8	10.5	---	---	9.1	10.0	7.4
High taxes	7.4	6.5	7.0	11.4	---	13.6	10.0	3.7
Lack of proximity to markets	3.9	3.7	5.3	---	---	---	5.0	11.1
Lack of proximity to materials	3.2	0.9	1.8	2.9	12.5	9.1	---	7.4
Other	11.2	12.0	14.0	14.3	12.5	4.6	10.0	3.7
No disadvantage	20.4	15.7	10.5	31.4	49.9	22.7	15.0	29.6

*Total excludes establishments not providing information on a specific primary disadvantage.

Source: M.S. Gordon and M. Tahl-Larsen, "Employer Policies in a Changing Labor Market, Report of the San Francisco Bay Area Employer Policy Survey, 1967" (Berkeley: Institute of Industrial Relations, University of California, July 1969).

Table XXIV

PRIMARY DISADVANTAGE OF PRESENT LOCATION, BY MAJOR INDUSTRY GROUP -
BAY AREA EMPLOYER POLICY SURVEY, 1967

Primary Disadvantage	Total	Mining & Construc- tion	Manufac- turing, Durable	Manufac- turing, Non- Durable	Transpor- tation & Utilities	Trade	Finance, Insurance, and Real Estate	Services	Govern- ment
All establishments	285	24	54	59	27	40	22	32	27
Number*	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Percent									
Lack of space for expan- sion, lack of reasonably priced land, or age of plant	20.6	12.5	11.1	16.7	37.1	27.5	18.2	31.4	18.5
Poor site <u>re</u> immediate neighborhood	9.8	---	5.6	8.5	3.7	25.0	18.2	6.2	11.1
Lack of proximity to markets	3.9	---	5.6	10.2	3.7	2.5	---	---	---
Lack of proximity to materials	3.2	4.2	7.4	5.1	---	2.5	---	---	---
Lack of access to trans- portation	10.5	12.5	3.7	3.4	7.4	2.5	13.6	34.4	22.2
High wage rates	13.0	---	37.0	15.3	3.7	5.0	9.1	3.1	7.4
High taxes	7.4	4.2	11.1	13.6	---	10.0	4.5	3.1	---
Other	11.2	20.8	3.7	13.6	11.1	12.5	18.2	6.2	11.1
No Disadvantages	20.4	45.8	14.8	13.6	33.3	12.5	18.2	15.6	29.7

*Total excludes establishments not mentioning a specific primary disadvantage.

Source: M.S. Gordon and M. Tahl-Larsen, "Employer Policies in a Changing Labor Market, Report of the San Francisco Bay Area Employer Policy Survey, 1967" (Berkeley: Institute of Industrial Relations, University of California, July 1969).

Table XXV

AREA ACCOUNTING FOR 75% OR MORE OF ESTABLISHMENT'S MARKET,
BY MAJOR INDUSTRY GROUP-
BAY AREA EMPLOYER POLICY SURVEY, 1967

Major Industry Group	Area Accounting for 75% or More of Market							
	Total #	%	City of Location	Bay Area	Calif.	Western Region	Conti- nental U.S.	Pacific Area or Worldwide
All establish- ments*	305	100.0%	13.8%	36.0%	17.4%	12.8%	14.1%	5.9%
Mining and construction	26	100.0	7.7	50.0	30.8	---	3.8	7.7
Manufacturing								
Durable	56	100.0	1.8	8.9	16.1	26.8	39.3	7.1
Nondurable	62	100.0	4.8	29.0	19.4	27.4	19.4	---
Transportation and utilities	27	100.0	22.2	29.7	14.8	3.7	3.7	25.9
Trade								
Wholesale	13	100.0	---	69.2**	15.4**	7.7**	---	7.7**
Retail	33	100.0	18.2	78.8	3.0	---	---	---
Finance, insurance and real estate	25	100.0	16.0	32.0	32.0	16.0	4.0	---
Services	36	100.0	22.2	4.16	16.7	2.8	13.9	2.8
Government	27	100.0	44.5	29.6	11.1	---	3.7	11.1

*Total excludes establishments not reporting area accounting for 75% or more of establishment's market.

**Percentages based on fewer than 15 cases.

Source: M.S. Gordon and M. Tahl-Larsen, "Employer Policies in a Changing Labor Market, Report of the San Francisco Bay Area Employer Policy Survey, 1967" (Berkeley: Institute of Industrial Relations, University of California, July 1969).

Table XXVI

MOST IMPORTANT REASONS FOR MOVING, FOR FIRMS
THAT HAVE MOVED IN LAST FIVE YEARS -
BAY AREA EMPLOYER POLICY SURVEY, 1967

Reason	First Most Important	Second Most Important	Total First and Second Most Important
All Establishments that Moved (For all reasons) ^a			
Number	35	10	45
Percent	100.0	100.0	100.0
Need for More Space	59.9	---	46.8
Modernization of Plant	8.6	20.0 ^b	11.1
Other Reasons Relating to Physical Plant	14.3	10.6 ^b	13.3
Reasons Relating to Environmental Factors	2.9	10.0 ^b	4.4
Availability of Types of Labor Required	---	20.0 ^b	4.4
Reasons Relating to Trans- portation Requirements	---	20.0 ^b	4.4
Availability of Land at Reasonable Price or Other Economic Factor	8.6	10.0 ^b	8.9
Other	5.7	10.0 ^b	6.7

^aTotal excludes establishments that moved but did not report a reason for moving.

^bPercentages based on fewer than 15 cases.

Virtually all of San Francisco's industries, with the possible exception of specialized manufactures, small "rush order" printing firms, and selected wholesalers in industrial districts adjacent to the downtown, are handicapped by lack of floor space and land for expansion. This is especially true for industries requiring more than 20,000 square feet of floor space and substantial freight and loading areas. The importance of inadequate space as a locational determinant in San Francisco is illustrated by the fact that 60 percent of all firms in the Bay Area moving during the 1963-1967 period cited the need for more space as the most important reason for their change in location.* For San Francisco, a densely populated city with limited land area for expansion, this is significant.

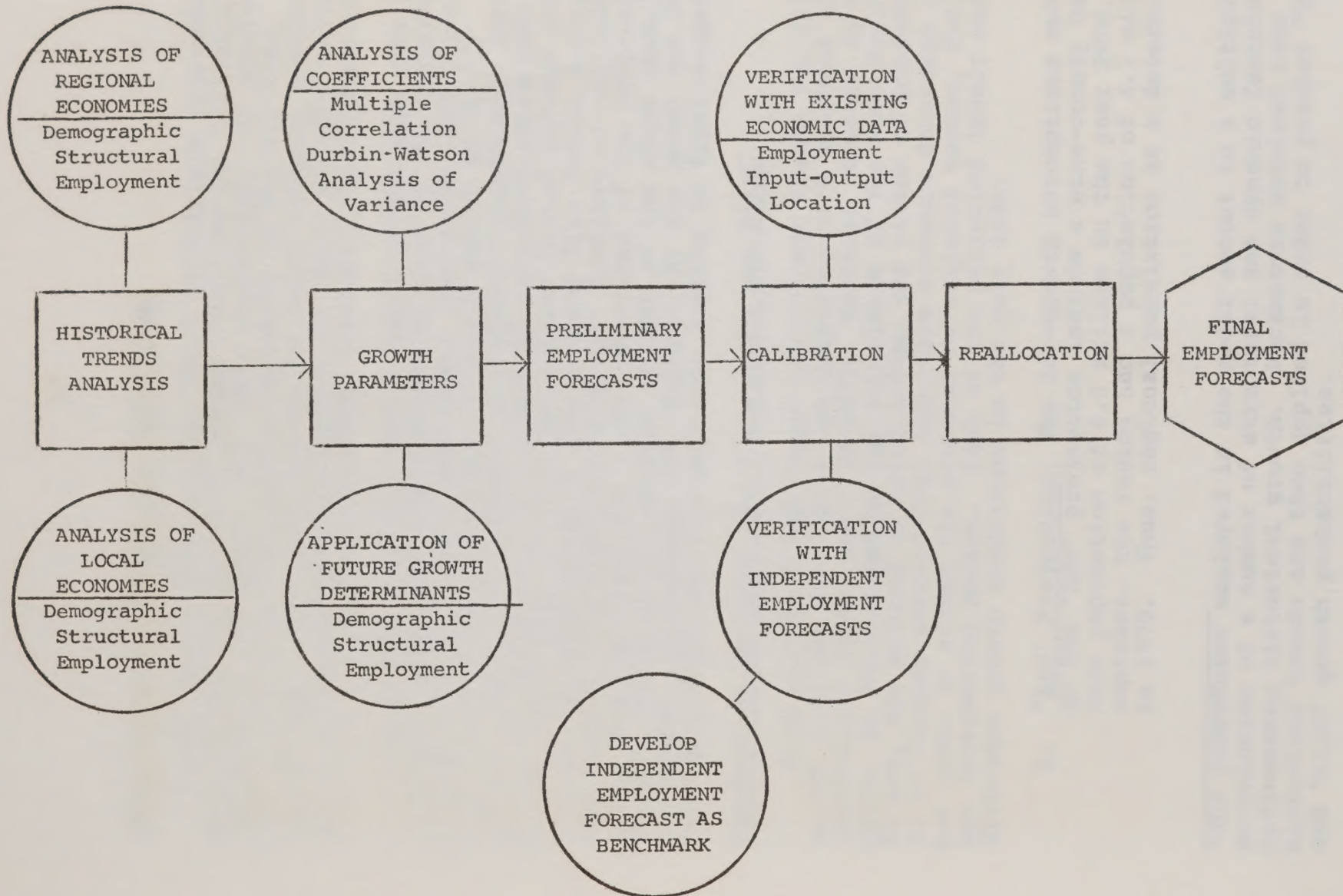
*See Table XXVI for more detailed information on firm migration patterns.

INDUSTRIAL EMPLOYMENT PROJECTIONS: 1970 to 2000

The relationship between current planning and future urban growth has become a pervasive planning problem. As growth occurs it places new strains on such important functions as resource management, public services and facilities, and zoning. Thus, a range of industrial employment projections has been prepared to illustrate alternative economic futures and to measure several factors important to municipal policy formation. The following forecasts are based on two principal local/regional growth alternatives. They provide an illustration of the several key economic elements: (1) probable economic growth among major economic sectors and selected individual industries, (2) future San Francisco economic composition, (3) changing regional employment shares, and (4) the strength of various socioeconomic variables (population and regional economies) in influencing the magnitude and scope of local economic activity.*

*While industrial employment forecasts have been based on accepted statistical methodologies, it should be noted that all forecasting models have limitations. It must be stressed that as projections are extended into the future, the probability of variance from established trends increases. Furthermore, the intervention of factors, uncontrolled by the model could affect the accuracy of the model's output. Therefore, the reader should not consider the following projections as either precise estimates of the future or recommended policy. Rather, they represent a range of potential growth scenarios from given historical data, thus aiding in the establishment of sound planning choices. As a set of preliminary forecasts, the following projections are an initial step in continuing evaluation of the sources and impacts of economic growth.

EMPLOYMENT PROJECTION PROCEDURES



Description of Projection Techniques

Employment forecasts are based on multiple regression analysis of the 1950-1972 period utilizing the following independent variables: (1) local population, (2) population of the eight surrounding counties of the Bay Area, (3) regional employment shares for major economic sectors and (4) number of establishments for major economic sectors and selected two-digit Standard Industrial Classifications.*

Calibrations of preliminary model output were made in relation to the relative strength of each of the regressor variables in predicting employment change and comparisons with existing data from the 1970-1973 period to verify empirically the coincidence of projected growth with actual data. In addition, verification of projected employment to the years 1980 and 1985 was further tested through other statistical methodologies (Box-Jenkins Time Series Analysis), thus providing a "quasi-independent" forecast of employment growth for the first and second quartiles of the projection period. Based on the results of each of the above technical procedures (projections and calibration) the model was run through a final set of iterations leading to final output.

Assumptions on which the Projections are Based.

Both the "Low" and "High" projections assume the future growth will not deviate in its relations with measured trends established during the 1950-1972. Periodic economic recessions, as represented by the experience of the Post-World War II era, are assumed to occur during the period of projection. It is further assumed that long-term economic downturns will not occur in either the national or regional economy during the forecasting period. Each of the projected levels assumes different growth conditions in the year 2000:

1. "Low" Projection. The low-growth assumptions making up the "Low" projection include a nine-county Bay Area population of 6.2 million in the year 2000. By contrast, the region had a population of 4.7 million in 1970. Thus, regional population as a determinant

*The procedures employed in the model amount to a multiple correlation of a number of structural and dynamic factors influencing historical growth. Parameters obtained over historical trends are then applied in order to predict "low" and "high" growth probabilities.

of employment growth would rise by 31.9 percent during the 1970-2000 period. This represents an average annual increase of 1.06 percent.* Local population is assumed to be at 599,500, a decrease of 16.1 percent from 1970. (This compares with a local population of 11.8 percent since 1960).

2. "High" Projection. The high-growth assumptions call for a nine-county regional population of 7.5 million in the year 2000. This implies a growth of 59.6 percent or 1.9 percent per year during the projection period. Local population is assumed to be at 717,800 in the year 2000, an increase of .4 percent or .01 percent per year. Thus, it is assumed that while regional growth would nearly double from the rate set during the 1950-1970 period, local population would stabilize.

*This represents an approximate continuation of regional population trends set during the 1950-1970 period but with zero net-migration. Regional population growth experienced during the 20-year period was approximately 1.0 percent per year. Population projections used in the model have been established by the State Department of Finance as low and high estimates for the year 2000.

Table XXVII indicates the range of local employment shares both in 1970 and in the projected year 2000. Proportions of total city employment strongly reflect a growing importance of commercial markets and their ancillary industrial functions (wholesale trade again appears as an anomaly to this established trend). Other industries, such as contract construction and water transportation, do not show a clear trend towards growth or decline; rather, these industries demonstrate a highly oscillatory pattern indicating that their share of total city employment could either decline slightly or stabilize.

Table XXVII

INDUSTRIAL EMPLOYMENT PROJECTIONS FOR MAJOR INDUSTRY GROUPS
AND SELECTED TWO-DIGIT INDUSTRIES: 1970 to 2000

S.I.C. No.	Category	Number Employed: 1970*	Projected Number Employed: 2000 Low High	Percentage Change: 1970 to 2000	R ²	Standard Error of Estimate
-	Total Employment	515,230	595,000 675,000	15.5 to 31.0	.8681	12,966.8
-	Industrial Employment	138,853	110,500 137,000	-20.4 to - 1.3	---	---
15-17	Contract Construction	19,919	17,500 24,500	-12.1 to 23.0	.6832	1,475.8
19-39	Manufacturing	53,782	40,000 47,500	-25.6 to -11.7	.9762	2,588.4
20	Food and Kindred	13,462	9,500 11,000	-29.4 to -18.3	.7016	819.7
23	Apparel	8,213	7,000 8,000	-14.8 to - 2.6	.5849	411.3
26	Paper and Allied Products	1,781	1,500 2,000	-15.8 to 12.3	.8619	268.2
27	Printing & Publishing	10,093	11,500 13,000	13.9 to 28.8	.8424	865.5
28	Chemicals and Allied Products	1,790	1,000 1,500	-44.1 to -16.2	.6423	191.4
29	Petroleum and Kindred Products	3,875	2,500 4,000	-35.5 to 3.2	.5430	248.3
34	Fabricated Metal	5,475	2,500 4,000	-54.3 to -26.9	.8570	300.6

Table XXVII (Continued)

S.I.C. No.	Category	Number Employed: 1970*	Projected Number Employed: Low	2000 High	Percentage Change: 1970 to 2000	R ²	Standard Error of Estimate
37	Transportation Equipment	1,623	1,500	1,600	- 7.6 to - 1.4	.5212	275.3
38	Instruments and Related Products	404	500	1,100	23.8 to 172.3	.8666	86.3
-	Other	---	2,500	1,300	---	---	---
41	Local and Interurban Passenger Transit	4,296	4,500	5,500	4.7 to 28.0	.8231	331.1
42	Trucking and Warehousing	7,287	6,500	9,000	-10.8 to 23.5	.8935	452.9
44	Water Transportation	11,081	9,000	13,000	-18.8 to 17.3	.7711	2,168.7
45	Transportation by Air	2,849	5,000	6,500	75.5 to 128.2	.9667	486.7
50	Wholesale Trade	39,639	28,000	31,000	-29.4 to -21.8	.9925	589.3

*Source: State Department of Human Resources Development, California Employment and Payrolls, 1970.

Table XXVIII

ECONOMIC COMPOSITION OF SELECTED SAN FRANCISCO INDUSTRIES: 1970 and 2000

S.I.C. No.	Category	Number Employed: 1970*		Projected Number Employed: 2000 (low)		Projected Number Employed: 2000 (High)	
		% City Employment		% City Employment		% City Employment	
-	Total Employment	515,230	100.0	595,000	100.0	675,000	100.0
-	Industrial Employment	138,853	26.9	110,500	18.6	137,000	20.3
15-17	Contract Construction	19,919	3.9	17,500	2.9	24,500	3.6
19-39	Manufacturing	53,782	10.4	40,000	6.7	47,000	7.0
41	Local & Interurban Passenger Transit	4,296	.8	4,500	.8	5,500	.8
42	Trucking & Warehousing	7,287	1.4	6,500	1.1	9,000	1.3
44	Water Transportation	11,081	2.2	9,000	1.5	13,000	1.9
45	Transportation by Air	2,849	.6	5,000	.8	6,500	.9
50	Wholesale Trade	39,639	7.7	28,000	4.7	31,000	4.6

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*Source: State Department of Human Resources Development, California Employment and Payrolls, 1970.

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